

REMARKS

Status of the Claims

Claims 1, 12, 14, 15, 17, 18, 20, 21, 23, and 24 are pending in the present application. Claims 2-11, 13, 16, 19, 22, and 25 were previously canceled. Reconsideration is respectfully requested.

Issues Under 35 U.S.C. § 103(a)

Claims 1, 12, 14, 15, 17, 18, 20, 21, 23, and 24 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over PCT Publication No. WO 98/54961 to Hansen in view of Lyznik *et al.*, *The Plant Journal*, 1995, 8:177-186. Specifically, the Examiner reiterates that Hansen teaches a method of gene transfer to maize by *Agrobacterium* comprising heating maize calli at 45°C for 4 minutes. The Examiner further states that Hansen does not teach centrifugation from 1000G to 150,000G. However, according to the Examiner, Lyznik teaches that maize protoplasts are harvested in Eppendorf tubes by centrifugation for 5-10 seconds at 1000G to replace medium with extraction buffer. The Examiner asserts that a skilled artisan would have been motivated to modify the method taught by Hansen to centrifuge the cells in order to facilitate changing buffer medium.

Applicants maintain that the embodiment of the instant claims, which allegedly is obvious in view of Hansen and Lyznik, results in unexpected advantages. That is, the present application in Example 2 teaches that maize embryos, treated at 46°C for 3 minutes and centrifuged, demonstrate increased GUS expression in comparison to embryos that are heat- or centrifuged-treated only. The Examiner agrees that Applicants have demonstrated comparable unexpected results. See, Office Action, pages 4-5. However, the Examiner is only willing to allow claims that are limited in scope to the working examples or to the incubation times, temperatures, centrifugation times and speeds that provide superior results as described in the originally filed application. See, Office Action, page 5. The Examiner bases her opinion, in part, on Applicants' declaration of October 24, 2008, and points to some of the combinations of incubation times and temperatures and alleges that they did not produce superior results or that some combinations produced detrimental results. See, Office Action, page 5.

Applicants respectfully traverse.

The evidence of unexpected results is commensurate in scope with the present claims.

First, Applicants reiterate that the data submitted in the declarations is commensurate in scope with the full breadth of the claims. The scope of the claims excludes inoperative embodiments. As amended in the previous response, the claims specify that the “efficiency of gene transfer is increased in comparison to the efficiency of gene transfer by *Agrobacterium*, wherein the plant cells or plant tissues are not heated or centrifuged according to steps a) and b).” Accordingly, the detrimental results discussed by the Examiner are not encompassed by the present claims.

Moreover, Applicants submit that an ordinary artisan understands what is meant by “gene transfer efficiency is increased”, as specified in the instant claims. An ordinary artisan, *i.e.*, a Ph.D. level scientist, would not recognize a minute change or difference in gene transfer efficiency as an “increase.” Accordingly, Applicants submit that any non-superior results are not encompassed by the instant claims.

The Examiner also appears to misunderstand the evidence in U.S. Application 10/089,696. The Examiner states that “[m]ost of the data are directed to centrifugation speeds of 20,000 and 40,000 x g . . . and the only data directed to higher speeds were carried out for 3 days and 6 days which is significantly longer than the 1 second to 4 hours of the instant claims.” Office Action, page 6. The Examiner appears to be referring to Tables 7-13 of ‘696. But in those tables, the “3 days and 6 days” refer to the duration of co-culturing. In all of the data presented, the duration of centrifugation is 30 minutes or 60 minutes, which is within the range of 1 second to 4 hours defined in the present invention. The duration of centrifugation is expressly described immediately below each table. For example, under Table 7 on page 22, it is stated “Centrifugation was carried out for 60 minutes at the indicated revolution”. Thus, the duration of centrifugation was 60 minutes. Therefore, the unexpected results are commensurate in scope with the claims.

Because the present claim scope is commensurate with the showing of unexpected results, Applicants submit that the evidence of unobviousness is sufficient to overcome the rejection based on Hansen. For these reasons, Applicants request that the rejection be withdrawn.

Applicants are only required to provide evidence commensurate in scope with the prima facie case.

Applicants also submit that they have provided sufficient evidence demonstrating that the present invention is unobvious over the cited prior art because they have shown evidence which the Examiner agrees is commensurate in scope with the teachings of the prior art.

In re Hyson, 453 F.2d 764, 172 USPQ 399 (CCPA 1972) held that the evidence of non-obviousness provided by Applicants was not commensurate in scope with the claims. However, the court stated: “[t]he Patent Office having made out a case of prima facie obviousness commensurate in scope with the claims, it became incumbent upon the appellant to rebut that case, if he could, with evidence of similar scope,” *Hyson*, 172 USPQ at 402 (emphasis added). The implication of *Hyson* is that if the *prima facie* case was of somewhat less than the full scope of the claims, then evidence of non-obviousness of the same, narrower, scope would have been sufficient to overcome the rejection based on the reference.

Applicants previously pointed to evidence in the present application that demonstrates that the part of the claimed subject matter, which is allegedly *prima facie* obvious, results in an unexpected advantage, *i.e.*, unexpected gene transformation efficiency occurs in maize tissue at about 46°C incubated for three minutes and centrifuged. In addition, Applicants have provided data demonstrating unexpected effects for several plant species at a variety of temperatures, incubation periods, centrifugation speeds and centrifugation time periods. Accordingly, Applicants have provided evidence of a scope that is sufficient to overcome the art of record.

Moreover, the Examiner stated in the interview of March 20, 2009, of record:

The Examiner stated that if the Hansen reference is overcome by a showing of unexpected results, specifically for maize calli at 45° for 4 minutes, then the Examiner would be required to search for art on other tissues, temperatures and incubation times, to ensure that the entire breadth of the claims is truly free of the art.

As noted above, the Examiner agrees that Applicants have provided unexpected results that are comparable to the Hansen disclosure. Accordingly, the Examiner should withdraw the rejection.

Based upon the foregoing, Applicants submit that the claims are in condition for allowance.

CONCLUSION

In view of the above amendment and remarks, Applicants believes the pending application is in condition for allowance.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a four (4) month extension of time for filing a reply in connection with the present application, and the required fee of \$1,730.00 is attached hereto.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact L. Parker, Reg. No. 46,046, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: October 4, 2010

Respectfully submitted,

By 

Gerald M. Murphy, Jr.

Registration No.: 28,977

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road

Suite 100 East

P.O. Box 747

Falls Church, Virginia 22040-0747

(703) 205-8000

Attorney for Applicants